Claims

1. In an electrolytic tilt sensor comprising a metallic containment envelope having at least two apertures formed therein and an interior chamber, an electrolytic solution partially filling the chamber, and at least two electrodes electrically isolated from the chamber, each electrode having an electrolytically active portion located within the chamber and a lead portion extending to the exterior of the envelope through a corresponding one of the apertures, a meniscus inhibitor located within the interior chamber and comprising a nonporous, chemically resistant, high dielectric material surrounding the electrodes and in contact with a peripheral wall of the interior chamber.

2. The meniscus inhibitor of claim 1, wherein the material is in the form of a hollow cylinder open at each end.

3. The meniscus inhibitor of claim 2, wherein the cylinder has a preselected outer diameter and a preselected inner diameter to define a preselected wall thickness and occupies at least a portion of the interior volume of the containment envelope where a meniscus would normally form for reducing fluid volume normally consumed by the meniscus.

4. The meniscus inhibitor of claim 1, wherein the material is a polymeric material.

5. The meniscus inhibitor of claim 4, wherein the polymeric material is selected from the group comprising polypropylene and polyethylene.

6. An electrolytic tilt sensor having improved linearity and response time, comprising:

a metallic containment envelope defining a chamber and having a plurality of apertures therethrough;

an electrolytic solution partially filling the chamber;

a plurality of electrodes, each electrode extending through a corresponding one of the apertures and having an electrolytically active portion located within the chamber and spaced apart from an interior surface of the envelope and a lead portion extending to the exterior of the envelope, at least one of the electrodes being a sensing electrode and at least one electrode being a common electrode; and

a meniscus inhibitor located within the interior chamber and comprising a nonporous, chemically resistant, high dielectric material surrounding the electrodes and in contact with a peripheral wall of the interior chamber.

7. The electrolytic tilt sensor according to claim 6, wherein the material is in the form of a hollow cylinder open at each end, the cylinder having a preselected outer diameter and a preselected inner diameter to define a preselected wall thickness, the cylinder occupying at least a portion of the interior volume of the containment envelope where a meniscus would normally form for reducing fluid volume normally consumed by the meniscus.

8. The electrolytic tilt sensor according to claim 6, wherein the material is selected from the group comprising polypropylene and polyethylene.

9. The electrolytic tilt sensor according to claim 7, wherein the material is selected from the group comprising polypropylene and polyethylene.

10. An electrolytic tilt sensor having improved linearity and response time, comprising:

a metallic containment envelope defining a chamber and having a plurality of apertures therethrough;

an electrolytic solution partially filling the chamber;

a plurality of electrodes, each electrode being electrically isolated from the chamber and extending through a corresponding one of the apertures, each electrode further having an electrolytically active portion located within the chamber and spaced apart from an interior surface of the envelope and a lead portion extending to the exterior of the envelope, at least one of the electrodes being a sensing electrode and at least one electrode being a common electrode; and

a meniscus inhibitor located within the interior chamber and comprising a hollow cylinder open at each end and surrounding the electrodes and in contact with a peripheral wall of the interior chamber, the cylinder being a nonporous, chemically resistant, high dielectric material and having a preselected outer diameter and a preselected inner diameter to define a preselected wall thickness, the cylinder occupying at least a portion of the interior volume of the containment envelope where a meniscus would normally form for reducing fluid volume normally consumed by the meniscus.

11. The electrolytic tilt sensor according to claim 10, wherein the material is selected from the group comprising polypropylene and polyethylene.